

November 17, 2004

**CERTIFIED MAIL
RETURNED RECEIPT REQUESTED**

Mr. Dean Kunihiro
Senior Vice President
Licensing and Regulatory Affairs
Waste Control Specialists LLC
5430 LBJ Freeway, Suite 1700
Three Lincoln Centre
Dallas, Texas 75240

Re: Second Administrative Notice of Deficiency
Radioactive Material License, Andrews County
Proposed Low-Level Radioactive Waste License No. RW4100
Regulated Entity Number: RN104392790
Customer Reference Number: CN600616890

Dear Mr. Kunihiro:

Thank you for your October 18, 2004, response to our initial administrative review of the application for a license to authorize near-surface land disposal of low-level radioactive waste (LLRW). Our review of your responses to noted administrative deficiencies indicates that the application remains administratively incomplete with regard to TCEQ rules. As was noted before, the test of administrative completeness is a determination whether there is sufficient information to allow a technical review (30 TAC §336.807(d)). If, for example, the administrative review results in a finding that some information presented by the applicant consists essentially of statements of the applicant's beliefs or conclusions, but apparently unsubstantiated by reviewable data, then the applicant is deemed to have not met the test of sufficient information and the application, as it stands, is considered to remain administratively incomplete.

While several issues raised in the initial administrative review have been satisfactorily resolved in terms of administrative completeness, others remain unresolved, or have only been partially resolved. Additionally, two new issues have been identified in this notice. The first involves Sections 2.61 and 2.7.1 of the license application and requests for isopach maps to aid in the identification of soils and geological features. The second issue involves Section 5.2 of the license application and a request for submittal of a waste analysis plan.

The executive director may require statements or data from an applicant to enable the commission to

determine whether the application should be granted or denied. The information that must be submitted to make the application administratively complete is listed as Attachment 1, "Administrative Deficiencies." Although we have attempted to identify all the relevant sections, appendices, figures, tables, etc., associated with the listed deficiencies, it is the responsibility of the applicant to address all applicable areas related to noted deficiencies.

During our administrative review, we also noted areas where additional information/clarification will be necessary to further the comparative-merit and technical reviews of the application. Although these areas are not part of our determination of administrative incompleteness, we are notifying you of the same, in advance of subsequent reviews, in order to expedite the overall review process. These areas are listed in Attachment 2, "Additional Information."

Under separate cover, labeled "CONFIDENTIAL," we are submitting "Attachment 3," which includes requests for clarification or additional information on the financial sections of the application that you have designated as "CONFIDENTIAL."

Please feel free to submit revisions, as necessary, to effect corrections or clarifications beyond the scope of noted deficiencies with your response.

Please submit an original response and eight (8) copies of your application revisions, including the signature page of the application. You are also required to post the final administratively complete application in a publicly accessible location, and to the website, including all amendments and or supplements to the application (30 TAC §336.805(4)).

Failure to submit the requested information within thirty (30) days of the date of this letter, pursuant to 30 TAC §336.807, will cause the application to be removed from our list of pending applications and the executive director shall return the incomplete application to the applicant.

If you have any questions regarding this matter, you may contact Mr. Wade M. Wheatley, P.E., Director, Waste Permits Division at (512) 239-6787, or you may write him at the following address: TCEQ, Office of Permitting, Remediation & Registration, Waste Permits Division, Director's Office (MC-126), P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

David L. Howell, P.E., Manager
Permits Administration Review Section (MC 161)
Registration, Review and Reporting Division

DLH/pm

Attachments

cc: Mr. Stephen L. Cook, P.E., Cook-Joyce Inc. - Austin
Ms. Nancy Neuse, Cook-Joyce Inc. - Austin

Attachment 1

**Administrative Deficiencies
17 November 2004**

Instructions, Item 12

All geoscience documents must be prepared by or under the supervision of a Texas licensed professional geoscientist (P.G.), in accordance with Section 8.01 of the Texas Geoscience Practice Act. Geoscience includes the science of the earth and its origin and history, the investigation of the earth's environment and its constituent soils, rocks, minerals, fossil fuels, solids, and fluids, and the study of the natural and introduced agents, forces, and processes that cause changes in and on the earth. All geoscience documents submitted in this application must bear the full name, signature, date, license number, and seal of the geoscientist under which the document was prepared. If more than one P.G.'s work is contained in a document, both seals are required on the document and the limits of their work clearly indicated. [22 TAC, Part 39, Chapter 851]

Comment: The applicant in its ANOD response states that Figure 8.1-1 has been revised to include seal and signature, however, the revised figure was not included in the response. Other figures that have not been sealed and signed include Volume 1, Figure 2.4.4-1, "Proposed Site Proximity to River Segments, Sole Source Aquifers, and Reservoirs," (p. 2-71); Volume 2, Figures 2.1-2, and 2.2-2; Volume 3, Figures 6.2-2, 6.2-8, 6.4-9, 6.4-10, 6.5-3, 6.6-1, 6.6-6, 6.6-7, 6.6-10, and 6.6-12; Volume 5, Title Page to Appendix 6.5-1, in addition to Figures 6.5-1.1, 6.5-1.2, 6.5-1.3 (in 2 places), 6.5-1.4, 6.5-1.5, 6.5-1.6, and 6.5-1.7; Volume 6, Attachment 6, "Oil Wells on the Flying W;" Volume 7, Figure 2-1; Volume 8A, Attachment 3.0-3.12, "Geotechnical Evaluation;" and Volume 12, Figures 8.1.4-1, 8.1.4-2, 8.1.4-3, and 8.2.2-1.

Section 1.11

For applications for new licenses, license renewals, and major amendments a copy of the administratively complete application must be made available at a public place in the county where the facility is located or proposed to be located for review and copying by the public. Identify the public place in the county (e.g., public library, county court house, city hall) including the address, where the application will be located.

Comment: The applicant states on page 2 in the document titled "WCS Responses to TCEQ Administrative Deficiencies" (dated October 15, 2004) that the building which houses the privately owned place is publicly owned however, this does not qualify the privately owned Chamber of Commerce as a public place. Please identify a public place in the county (e.g., public library, county court house, city hall) including the address, where the application will be located.

Section 1.14

If the applicant proposes to contract the management of the construction and/or operation of the disposal facility to another person, the full name, address, and telephone number of the management contractor, the full name and address of each principal, partner, or

director of the contractor, the state where it is organized, and the principal location where it does business. [30 TAC §336.706(a)(1)(D)]

Comment: The applicant has stated on pages 2 and 3 of the document “WCS Responses to TCEQ Administrative Deficiencies” that WCS does not intend to contract the management of the construction or operation of the facility to others. Please amend Section 1.14 of the application accordingly.

Section 1.19

Submit as “Attachment B” a copy of the warranty deed or other conveyance showing that the right, title, and interest in the land, including mineral interests, on which the land disposal facility or facilities are proposed to be located is owned in fee by the applicant. If land, including mineral interests, is not owned in fee by the applicant, indicate how the requirements of §§336.710 and 336.734 will be addressed. [30 TAC §336.807(d)(9)] & [THSC §401.204]

Comment: The applicant has not provided information clearly showing ownership of all mineral interests underlying the proposed land disposal facilities as required by 30 TAC §336.807(d)(9). The applicant has not shown the location and extent of mineral ownership on a plan-view map or plat map as requested in the previous Administrative Notice of Deficiency (ANOD). Information provided in the Application for Exemption, Appendix 1.19.2, Exhibit C, Updated Ownership Report, describes only the mineral estate for Section 25, whereas the “facility” shown on Figure B-2 of Volume 1, Attachment B, appears to encompass portions of Sections 16, 17, 24, 5 and 4, as well. Please provide a map which clearly shows the location and extent of the proposed *land disposal facilities*, as that term is defined at 30 TAC §336.2(68), and provide complete mineral estate information for the remaining Sections of land or portions thereof underlying the proposed land disposal facilities.

Comment: Volume 1, Attachment B, Figures B-1 and B-2 do not show the location of the proposed land disposal facilities. The term *land disposal facility* does not appear anywhere on these Figures. Figure B-2 does show a “facility” consisting of approximately 1338 acres; however, this use of the term “facility” does not appear to be consistent with defined terms and does not meet the requirements of Section 1.19 of the application. The area that the applicant is describing as the “facility” appears to be the location of the *land disposal facilities*. It is our understanding from the meeting with WCS officials on October 8, 2004, that the land, buildings and structures, and equipment at the proposed land disposal facilities will be used for storage and processing activities related to the disposal of low-level radioactive waste; therefore, a complete description of the land disposal facilities must include activities related to storage and processing of the waste. Further, according to the Memorandum of Understanding Between the Texas Department of Health and the Texas Natural Resource Conservation Commission Regarding Radiation Control Functions, the receipt, storage, and/or processing of radioactive substances received by a TNRCC licensee at a commercial radioactive substance disposal facility for the explicit purpose of disposal at that facility shall be regulated by the TNRCC (25 TAC §289.101(d)(1)). Please provide a description of the proposed land disposal facilities that is consistent with defined terms in the application and on all referenced figures and drawings. This description must include activities related to the receipt, storage, and/or processing of waste,

including storage and processing that may be necessary due to compromised waste packaging or inclement weather, that is intended to be disposed of at the land disposal facility in accordance with the terms of the MOU referenced above.

Section 1.21.3

Institutional information in the application shall include: a description of the ownership of the land and fixtures that are part of the proposed disposal site. A plat plan describing the site and identifying ownership of the surface and subsurface estates must be included. Where portions of the site have been leased or will be leased to others, the terms of the lease agreement must be described [30 TAC §336.710(3)]

Comment: The application states that Attachment C provides a plat plan and describes the location of the property on which the proposed disposal site will be constructed; however, Volume 1, Attachment C, Figure C-1 does not include the term “disposal site” anywhere on this Figure. The terms for “site” and “facility” shown in Figure C-1 are not consistent with defined terms. The area that the applicant is describing as the “site” appears to be the location of the *disposal sites* for the Federal Facility Waste Disposal Facility and the Compact Waste Disposal Facility. The area that the applicant is describing as the “facility” appears to be the location of the *land disposal facilities*. A “land disposal facility” is situated within the “site,” and a “disposal site” is located within a “land disposal facility.” *Site* is defined as the contiguous land area where any land disposal facility or activity is physically located or conducted including adjacent land used in connection with the land disposal facility or activity (emphasis added). See the complete definition of site at 30 TAC §336.702(18). The TCEQ interprets *site* to mean the area owned or controlled by the applicant and extending to the site boundary. Further, representations of the Federal Facility Waste Disposal Facility and Compact Waste Disposal Facility shown in Figure C-1 are not consistent with the definition of a land disposal facility. A *land disposal facility* consists of the land, buildings and structures, and equipment which are intended to be used for the disposal of low-level radioactive waste into the subsurface of the land (30 TAC §336.2(68)). These integral components of a land disposal facility are not fully discussed in the application, nor are they represented on Figure C-1 and other referenced figures and drawings. The applicant should consider the concepts for siting a land disposal facility given in 10 CFR Part 61.7 (Concepts) and should make proper use of the terms for site, disposal site, land disposal facility, and facility, as those terms are defined in 30 TAC Chapters 336 and 305 in all referenced figures and application materials. Please provide a corrected Figure C-1 showing all of the required information and amend the application accordingly.

Comment: Please provide a map which clearly shows the location of the proposed disposal sites in relation to the three tracts of land referenced in Volume 2, Appendix 1.19.2, Exhibit C, Updated Ownership Report, identified as Tract 1 (NE/4), Tract 2 (NW/4) and Tract 3 (S/2) which comprise Section 25. Please note that the *disposal site* is defined as that portion of a land disposal facility which is used for disposal of waste. It consists of *disposal units* and a *buffer zone* (30 TAC §336.702(7)).

Section 1.23

Provide the applicant’s compliance history to demonstrate its regard for the regulatory process. [THSC 401.112(a)(5)]

Comment: The applicant states in the document titled “WCS Responses to TCEQ Administrative Deficiencies” (dated October 15, 2004) that a copy of the TDH compliance history is included in revised appendix 1.23; however, we were unable to locate this document in Appendix 1.23. The applicant then states that TDH does not maintain a formal procedure for maintaining or reporting compliance histories. Please correct this discrepancy and amend the application accordingly.

Comment: Inspections of the WCS facility are conducted by the TDH on six month intervals and are summarized in a letter to the applicant after each compliance inspection. Please provide copies of all compliance reports from the TDH for the past five years. Please include all Notices of Violation (NOVs) and their severity levels. Please provide a discussion of how all non-compliances received by WCS have been addressed and resolved to the satisfaction of TDH.

Section 2.1.1

Submit as "Attachment C" a legal description of each tract of land upon which the waste management operations referred to in this license application will occur or have occurred. Although a legal description is required, a metes and bounds description is not necessary for urban sites with appropriate "lot" description(s).

Comment: The applicant has not provided a legal description of each tract of land where waste management operations, including receipt, processing or storage of radioactive material will occur or have occurred as requested in the previous ANOD. This description must include the locations of any prior disposal containing radioactive material at the site in accordance with 30 TAC §336.707(6). See also 30 TAC §336.728(k). The applicant has stated on page 7 of the document “WCS Responses to TCEQ Administrative Deficiencies” that no waste management operations have occurred previously on the tract of land where the Compact and Federal Land Disposal Facility will be located; however, this does not address prior disposal of radioactive material at the site, including exempted material. Please provide a legal description of each tract of land where disposal of any radioactive material has occurred. Please also refer to the comments given at Section 1.21.3 above regarding proper use of defined terms, and also comments given in Sections 5.1 and 8.2.1, below.

Section 2.1.2

Submit as "Attachment D" a map illustrating the location of the proposed disposal unit(s) relative to established surveys.

Comment: Revised Volume 1, Attachment D, Figure D-1 is not a survey map as requested in the previous ANOD. There is not a survey referenced anywhere on Figure D-1. Please provide a map with the required survey information. Specifically, the survey map must show the location of the proposed disposal units relative to established surveys. The information provided in Volume 1, Attachment C, Figure C-1 does appear to show the location of the proposed disposal units relative to established surveys as required; however, the proposed disposal units do not appear to be correctly identified in this figure. See comment immediately below.

Comment: The terms for “site” and “facility” shown in Volume 1, Attachment D, Figure D-1, are not consistent with defined terms. The area that the applicant is describing as the “site”

appears to be the location of the *disposal sites* for the Federal Facility Waste Disposal Facility and the Compact Waste Disposal Facility. The area that the applicant is describing as the “facility” appears to be the location of the *land disposal facilities*. A “land disposal facility” is situated within the “site,” and a “disposal site” is located within a “land disposal facility.” *Site* is defined as the contiguous land area where any land disposal facility or activity is physically located or conducted including adjacent land used in connection with the land disposal facility or activity (emphasis added). See the complete definition of site at 30 TAC §336.702(18). The TCEQ interprets *site* to mean the area owned or controlled by the applicant and extending to the site boundary. Further, the Federal Facility Waste Disposal Facility and Compact Waste Disposal facility shown in Figure D-1 are not consistent with the definition of a land disposal facility. A *land disposal facility* consists of the land, buildings and structures, and equipment which are intended to be used for the disposal of low-level radioactive waste into the subsurface of the land (30 TAC §336.2(68)). These integral components of a land disposal facility are not fully discussed in the application, nor are they represented on Figure D-1 and other referenced figures and drawings. The applicant should consider the concepts for siting a land disposal facility given in 10 CFR Part 61.7 (Concepts) and should make proper use of the terms for site, disposal site, land disposal facility, and facility, as those terms are defined in 30 TAC Chapters 336 and 305 in all referenced figures and application materials. Please provide a corrected Figure D-1 showing all of the required information and amend the application accordingly.

Section 2.1.5.1

Submit as "Attachment F" a drawn-to-scale topographic map (or other map if a topographic map is unavailable) of the facility and area extending at least one mile beyond the facility boundaries. Maps must be prepared by a licensed professional engineer or a registered surveyor. Maps must be of material suitable for a permanent record, and be on sheets 8½ inches by 11 inches or folded to that size, and be on a scale of not less than one inch equals two thousand feet. The scale should be adequate to depict the approximate boundaries and areal size in acres of the facility; [30 TAC §305.45(a)(6)]

Comment: Revised Attachment F now seems to consist of three figures rather than two as stated in the document “WCS Responses to TCEQ Administrative Deficiencies.” The first of these three figures is titled “Topographic Map Attachment F” and appears to show a one-mile radius surrounding the proposed disposal sites rather than showing the area extending at least one mile beyond the facility boundary as required. Also, the figure does not include the seal and signature of a Texas licensed professional geoscientist. Please review and correct these discrepancies, and provide a revised figure that is properly sealed and signed.

Comment: Volume 1, Attachment F, Topographic Map, Figure F-1 appears to show a one-mile radius around the proposed facility as required in 30 TAC §305.45(a)(6); however, use of the term “site” is not consistent with the term *site* as defined at 30 TAC §336.702(18). The area that the applicant is describing as the “site” appears to be the location of the *disposal sites* for the Federal Facility Waste Disposal Facility and the Compact Waste Disposal Facility. Also, Figures F-1 and F-2 use the terms “Federal Land Disposal Facility” and “Compact Land Disposal Facility” which are not defined terms. Further, representations of the Federal Facility Waste Disposal Facility and Compact Waste Disposal Facility shown in Figures F-1 and F-2 are not consistent with the definition of a land disposal facility. A *land disposal facility* consists of

the land, buildings and structures, and equipment which are intended to be used for the disposal of low-level radioactive waste into the subsurface of the land (30 TAC §336.2(68)). Please provide revised figures using correctly defined terms and make sure those terms are used consistently in each of the referenced figures. See also Comments to Sections 1.21.3 and 2.1.2, above, regarding proper use of defined terms.

Section 2.1.6

Adjacent Landowners - [30 TAC §§305.45(a)(6)(D), 305.54(c)] Submit as “Attachment G” a map and a cross-referenced list of complete mailing addresses for all landowners of property adjacent to the facility. Also, submit a computer diskette or compact disk (CD) containing only the mailing list. The document should be formatted in WordPerfect® version 10 word processing software, or a 100% compatible format. Please label the disk with the applicant's name, regulated entity number (RNXXXXXXXXXX), customer number (CNXXXXXXXXXX) and street address (physical address). In formatting the mailing list, type the applicant's name, regulated entity number and street address on the top line before typing the addresses. Names and addresses must be typed in the format indicated below. This format is required by the U.S. Postal Service for machine readability. *Each letter in the name and address must be capitalized, contain no punctuation, and the appropriate two-character abbreviation must be used for the state.*

Comment: The list of adjacent landowners in Volume 1, Section 2.1.6, page 2-8 does not appear to be consistent with Volume 1, Attachment G. Specifically, the list on page 2-8 appears to be incomplete. Please review and correct this discrepancy.

Comment: A list and a plat map entitled Net Mineral Acres Purchased as of 10/01/04 are provided in Volume 1, Attachment G; however these documents do not appear to relate to the information requested in Section 2.1.6 of the application. This information would seem to be more appropriate in Section 1.19 of the application. Also, the plat map is illegible. Please correct this discrepancy and provide a legible plat map.

Comment: Attachment G, list of Adjacent Property Owners in New Mexico, appears to provide a list of landowners adjacent to the WCS site boundary; however, the list does not show any property owners for Section 32. Please provide this information. Also, there is no Interest % or Abstract Number given for property owners on this list. Please provide this information as well.

Section 2.2.1

Describe and quantify area and site characteristics including historical and cultural landmarks, archaeology, demography, and current land uses. [30 TAC §§336.708(a)(3), 336.708(a)(8)(B)]

Comment: The applicant needs to make reference to the Cultural Resource Survey (Appendix 2.2.1, Attachment 4) in the text. This was correct in the original application, but has been omitted in the revised version. This information should be placed at the beginning of Section 2.2.1.

Comment: The applicant needs to correct the figures for the minority population. In one paragraph, the applicant states wrongly that “the minority populations of Lea County and Andrews County were 32.9% and 22.9%, respectively.” The same incorrect figures are cited in Table 2.2.1-3. In the next paragraph, the applicant correctly states that “In Andrews County, approximately 43.2% of the population (5,618) is made up of individuals who are identified as Black, Hispanic, American Indian or Asian.”

Racial and ethnic categories are somewhat arbitrary, but in the United States these categories are significant in terms of identity and in terms of the law. Although the figures 32.9% and 22.9% are accurate census figures for the “non-White” population, this is NOT the proper way to calculate the “minority population.” In the United States, for legal and statistical purposes, the term “minority” is used to refer to BOTH “racial” minorities (African-American, Native American, Asian) and “ethnic” minorities (Hispanic/Latino). In the most recent census, respondents were asked two questions that relate to race and ethnicity. For the first question, people were asked to select which race they belong to (including an option for multiple or other). Since there is not a “Hispanic” option for the race question, Hispanics/Latinos can identify their race as “White” or “Other.” In practice, some Hispanics/Latinos identify as “White,” some identify as “Other,” and some (from the Caribbean) identify as “Black.” For the second question, people were asked whether or not they were Hispanic or Latino. The 32.9% and 22.9% figures are based on the first question only. However, the percent of “minorities” in a given population should be calculated from the combined result of both questions. More specifically, the census results list a percent of individuals who are “White, not Latino or Hispanic.” This number provides the percent of “non-minorities” from a U.S. perspective. The percent of minorities in a population can be determined by subtracting this number from 100. According to the 2000 Census, Andrews County has a minority population of 43.7% (compared to a state average of 46.7%), and Lea County has a minority population of 46.0% (compared to a state average of 55.3%). The national average for minorities is 30.9%.

Section 2.2.3

Describe and quantify socioeconomic effects on surrounding communities of operation of the licensed activity and of associated transportation of low-level radioactive waste.
[THSC 401.112(a)(3)]

Comment: The text in Section 2.2.3 does not adequately explain the numbers listed in Table 2.2.3-1. Although the text makes reference to Table 2.2.3-1 (on p. 2-66), there is no specific mention or explanation for the figures presented in the table.

Comment: On p. 2-27, the applicant states that officials from Andrews County have assessed “the risks and benefits of WCS prior to supporting the previous expansions.” In addition to information regarding how officials have made such assessments, please provide information regarding assessments of risks and benefits of the proposed disposal facilities made by *community* groups.

The application does not provide sufficient evidence to evaluate community perceptions. Although the application discusses the impacts of the project, the impacts are described in mostly positive terms and there is no discussion of how *community members* themselves

perceive the “risks” and “benefits” from the construction and operation of this facility. The only statement that addresses community perceptions is on p. 2-27: “Officials from Andrews County have performed their own due diligence (over a period of nearly ten years) to assess the risks and benefits of WCS, prior to supporting the previous expansions or the proposed project addressed in this application. Moreover, anecdotal evidence collected in a long running series of meetings with local civic and religious groups in the R.I. indicates widespread support among the general population for the proposed project.” This statement does NOT indicate how local community members perceive the risks and the benefits of the project. According to local community members, what are the perceived benefits? What are the perceived risks or costs? How do people understand the costs relative to the benefits? It is not enough to say they “support” the project.

On p. 2-27 of the application, the applicant states: “Public concerns associated with the disposal of radioactive waste are being addressed in a continuing dialogue between WCS and local stakeholders, including the disposal site operator, and the local communities and its residents. ” This statement seems to suggest that there ARE public concerns, but there is no indication about WHAT those concerns are. This section needs to include more qualitative statements about their specific opinions, including BOTH positive and negative opinions. Please provide statements from members of the community, as well as those of elected officials.

It is not clear why the data for Lea County is presented in Section 2.2.1, but there is little information about Lea County in Section 2.2.3. How do the elected officials of Lea County perceive the construction of this facility (especially given the fact that their county will not receive the same tax benefits as Andrews County)? How does the general population of Lea County feel about the use of this land for low-level radioactive waste disposal?

Please include the referenced resolutions of support from the Andrews City Council and Andrews Industrial Board of Directors, in addition to the resolution of the Andrews County Commission found as Attachment A of Section 1.

Comment: Please provide data/substantiation for the following declaration: “. . . acceptance of the project over the past ten years has cut across racial, ethnic, socioeconomic, and geographic lines. The unanimity of support has not just been an expression of sentiment from elected officials in the region of interest (R.I.), but has come from a broad base of the local population. There are not, for example, any viable locally created opposition groups in Andrews.”

Although the letter of support from the Andrews County Commissioner’s Court is positive, there is no clear evidence that this facility is supported by a “broad base of the local population.” The applicant should provide more evidence that the support for there is widespread support for this project. Such evidence could be based on focus group interviews within the community.

The applicant should also clarify what is meant by “viable” opposition groups. Are there some “non-viable” opposition groups in the community? If so, what are their primary concerns? Why are their concerns disregarded by the applicant?

Comment: Please provide data/substantiation for the following declaration on page 2-29: “the primary reason for widespread acceptance of the proposed project within the R.I. is that the management philosophy is to conduct an open, timely and responsive dialogue with the

representatives of state and local government as well as with local stakeholders.” How does the applicant maintain this dialogue? What methods are used to establish this dialogue (i.e., public meetings, hotline, etc.)? How is the effectiveness of this dialogue evaluated?

The applicant says in its October 18, 2004, response to administrative deficiencies, “Working closely with community leaders and public meetings are the primary means of establishing and maintaining public dialog.” This might answer the first questions, but it does not address the question about how the effectiveness of this dialogue is evaluated. Answering this question requires a qualitative assessment of existing public relations methods.

Section 2.3.1

Describe and quantify area and site characteristics including air quality, meteorology, climatology, and natural hazards. [THSC §401.112(a)(1)] & [30 TAC §336.708(a)(3)]

Comment: Please provide information about the routine weather-related site deterioration parameters, such as solar radiation, air pressure, and pressure and temperature gradients. [NUREG-1200, SRP 2.2, Section 2.2(1)(c)]

Section 2.3.2

Demonstrate that the site is not located in a county in which the average annual rainfall is greater than 20 inches. [THSC §401.217(2)] & [30 TAC §336.728(n)]

Comment: A computer file purporting to be data on the average annual rainfall at the WCS site was received in Microsoft Access format (extension *.mdb), but is not compatible with TCEQ software. Please convert this database to TCEQ-compatible software - the Corel equivalent, Paradox 10 - or present data on paper.

Section 2.4.1

Describe and quantify area and site characteristics, including surface hydrology. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Although the drainage features referred to in Section 2.4.1 of Volume 1 of the Application might be intermittent water bodies, they should be included in any description and scientific analysis of surface hydrology. For example, NRC Regulatory Guide 4.18 says, “baseline water quality of water bodies adjacent to the site should be provided, including, for example, pH, alkalinity, suspended solids, specific conductivity, biological oxygen demand, turbidity, total dissolved solids, dissolved oxygen, and the natural background radiation levels.” Please provide this information for Baker Springs and the ephemeral onsite playas.

Comment: Hydrograph information for each sub basin was received, however, the input hydrographs for all storm events are needed. Please submit either the electronic version of HEC-HMS file used for floodplain analyses or consider using HEC-1 and submitting hard copies. Also, provide the source of the input hydrographs used.

Section 2.4.2

Demonstrate that the disposal site is generally well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a 100-year flood plain, coastal high-hazard area, or wetland, as defined in Executive Order 11988, “Floodplain Management Guidelines.” [THSC §401.217(4)]& [30 TAC §336.728(d)]

Comment: Please add 500-year and Probable Maximum Precipitation (PMP) storm events to the floodplain study in Appendix 2.4.1. [NUREG-1200, SRP 3.4.4, Section 4.3.2.]

Section 2.4.5

Demonstrate that the site is not located less than 20 miles upstream of or up-drainage from the maximum elevation of the surface of a reservoir project that [30 TAC §336.728(p)]:

(1) has been constructed or is under construction by the United States Bureau of Reclamation or the United States Army Corps of Engineers; or

(2) has been approved for construction by the Texas Water Development Board as part of the state water plan under the Texas Water Code, Subchapter C, Chapter 16.

Comment: A letter from the Texas Water Development Board was received. Please provide a letter or other form of demonstration from the United States Bureau of Reclamation and/or United States Army Corps of Engineers that the site is not located less than 20 miles upstream of or up drainage from a reservoir.

Section 2.5.1

Describe and quantify area and site characteristics including geology, seismology and topography. [THSC §401.112(a)(1)] & [30 TAC §336.708(a)(3)]

Comment: Please revise the following geoscientific maps to include the outlines of the federal facility waste and compact waste disposal facilities: Volume 3, Figure 6.5-2; Volume 4, Figure 1, “Site Map and Geophysical Line Location,” Volume 4, Appendix 6.5-6, “Geotechnical Investigation and Engineering Analysis for Waste Control Specialists, Inc., Landfill Project, Andrews County, Texas, Appendix 1, Figures 2 and 3; Volume 5, Figures 6.5-1.1, 6.5-1.2, 6.5-1.3, 6.5-1.4, 6.5-1.5, 6.5-1.6, and 6.5-1.7; Volume 7, Figure 2-1; and Volume 8, Figures 1-1, 2-1, and 2-2.

Comment: Please identify wells 1 through 27 on Attachment 6, “Wells of the Flying W” in Appendix 6.6-1 of Volume 6. Wells should be identified as to owner or operator, well number, and purpose (i.e., water or oil).

Section 2.6.1

Describe and quantify area and site characteristics including geotechnical features, geochemistry, soils, and natural radiation background. [30 TAC §336.708(a)(3)]

Comment: Describe and quantify the lateral extent and thickness of each of the following: the two named surface soils, the Blackwater Draw, and the caprock caliche zone, particularly their distributions in relation to the boundaries of the federal waste disposal facility and the compact waste disposal facility. Individual contoured isopach maps would be useful for making this demonstration.

Section 2.6.2

Demonstrate that the disposal site will not be located in areas where soil conditions are such that spill cleanup would be impracticable. [30 TAC §336.728(l)]

Comment: In addressing this question from the previous ANOD, the applicant's response mentions:

- the soil is "moisture deficient"
- "Liquids are unlikely to migrate vertically downward beyond a depth of about 18 inches..."
- "generally low permeability of the underlying caliche"

Please substantiate the forgoing statements using testing data and resultant numerical values, and provide spill cleanup procedures.

Section 2.7.1

Describe and quantify area and site characteristics including ground water hydrology. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: We are unable to find many of the hydrogeologic parameters needed to determine the potential for groundwater flow through the geologic units. Please demonstrate that all of the data listed in Table 1 is provided in the application.

Comment: Describe and quantify the lateral extent and thickness of each of the following Dockum sands: the 80-foot sand, the 125-foot sand, the 180-foot sand, the 225-foot sand, the 600-foot sand, and the Santa Rosa Formation sand, particularly their distributions in relation to the boundaries of the federal waste disposal facility and the compact waste disposal facility. Individual contoured isopach maps would be useful for making this demonstration.

Comment: Referring to Volume 3, Figure 6.6-7, the geologic column used for the TOUGH2 groundwater flow model does not include the 180-foot sand, however, Volume 3, Figure 6.5-7, Cross Section D-D' indicates that the 180-foot sand lies underneath the proposed FWF. Please explain why the 180-foot sand is not given a layer designation for purposes of this model.

Section 2.10.1

Describe and quantify area and site characteristics, including natural radiation background. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Information is needed to determine the adequacy of the 1996 study of background

radiation and the effects on the environment due to radioactive material previously received at the site. Please provide a copy of the Radiological Environmental Monitoring Plan (REMP), associated sampling and analysis procedures, and all environmental reports generated in accordance with the REMP plan since the program's inception. Please note that the natural background radiation study and baseline environmental monitoring program will be considered as part of the site's pre-operational monitoring program. The REMP must be site specific and include the pre-operational, construction, operation, closure, and post-closure periods. To ensure adequacy of the REMP and associated procedures, the applicant is referred to guidance documents DOE/LLW-13Tg, *Low Level Waste Management Handbook Series - Environmental Monitoring for Low Level Waste Disposal Sites*, NUREG/CR-5054, *Recommendation to the NRC for Review Criteria for Alternative Methods of Low-Level Radioactive Waste Disposal - Environmental Monitoring and Surveillance Programs*, and NUREG-1388, *Environmental Monitoring of Low-level Radioactive Waste Facilities*.

Comment: Please refer to comments for **Section 6.2.1** which deals with environmental monitoring of non-radiological characteristics.

Section 2.10.2

Describe the baseline environmental monitoring program, including radioactive and chemical characteristics. [THSC §§401.112(a)(6), (11) & (17), 401.233(b)] & [30 TAC §336.708(a)(10)]

Comment: Please refer to comment for **Section 2.10.1**.

Section 2.10.3

Describe a pre-operational monitoring program to provide basic environmental data on the disposal site's characteristics. For those characteristics that are subject to seasonal variation, data must cover at least a 12-month period. [30 TAC §336.731(a)]

Comment: Please refer to comment for **Section 2.10.1**.

Section 3.1.3

Describe the facilities and systems used for or in connection with the collection, transportation, treatment, and disposal of waste. [THSC §401.112(a)(7)] & [30 TAC §305.45(a)(8)(A)]

Comment: Additional information is needed by the TCEQ regarding systems and facilities that will be used for treatment and storage of waste. With respect to storage, demurrage of shipments is listed as a viable option for every situation discussed in Section 5.3.1, and a 2 week time frame is listed in all cases. Demonstrate that storage systems and facilities that will be used in the event of a waste backlog have sufficient capacity to accommodate 2 weeks of demurrage for all shipments arriving at the facility during that time. In addition, please describe systems and facilities that will be used in the event that storage for periods greater than two weeks is required. With respect to treatment, describe systems and facilities that will be used to process

or repackage waste in the event of a waste package dropped or damaged on site, and waste that has arrived in leaking condition that must be over packed for transportation. [30 TAC §336.707(5)]

Section 3.1.5

Describe the plans for use of the land disposal facility for purposes other than disposal of waste. [30 TAC §336.706(a)(3)]

Comment: Additional information is needed by the TCEQ regarding plans for treatment and storage of waste. With respect to storage, demonstrate how plans to accommodate a waste backlog by demurrage dovetail with the capacity of facilities at the site. In addition, please describe plans that will be used in the event that storage for periods greater than two weeks is required. With respect to treatment, describe plans to accommodate waste that must be processed or repackaged because of a waste package dropped or damaged on site, and waste that has arrived in leaking condition that must be over packed for transportation. [30 TAC §336.707(5)]

Section 3.3

Provide accurate drawings and descriptions of on-site buildings including, but not limited to, construction, foundation details, instrumentation, ventilation, plumbing and fire suppression systems, and types of intruder barriers; onsite traffic systems; physical security system; survey control program; areas of waste storage. [30 TAC §§336.707(5), 305.54(f)]

Comment: Accurate drawings and descriptions of on-site buildings must be provided including, but not limited to: foundation details, ventilation, plumbing, and fire suppression, instrumentation details. [30 TAC §336.707(5)] Drawings provided must contain information sufficient to conduct relevant analysis. For example, the design description of a foundation must be sufficient to conduct structural analysis, and make an assessment of long term stability.

Comment: Please provide plans showing the construction and design of the extension to water and wastewater lines for the onsite facilities. Demonstrate adequacy of the system due to these additions and provide permits from the county to engage in septic and water line extension activities. [NUREG-1200; SRP 3.4.1 Section 4.3.3]

Section 3.4

Describe the design features of the land disposal facility and the disposal units. For near-surface disposal, the description shall include those design features related to structural stability of backfill and wastes. [30 TAC §§336.707(4), 305.54(f)]

Comment: Structural and stability analysis was provided for the trench elements, decon pads, tank footing pads, and staging pads. Please provide structural analysis for the buildings at the land disposal facilities, including: a numerical estimate and diagram of all stresses, a listing of all

design variables and specifications (such as materials properties), a numerical description of the design capacity to withstand stress, calculation of factor of safety using design capacity and total stress, and uncertainty bounds on the factor of safety. [30 TAC §336.707(4), §336.709(4)]

Section 3.6.1

Describe those design features related to infiltration of water, contact of wastes with standing water, and disposal site drainage. [30 TAC §§336.707(4), 305.54(f)]

Comment: Please quantify infiltration and water contact during construction, operation, and closure of the land disposal facilities. Also, clearly describe assumptions used, verification of results, and calibration methods used in infiltration modeling. [30 TAC §336.729(d)] [NUREG-1200, SRP 6.1.2, Section 2.1(1)] It would also be helpful to summarize the infiltration results in tabular form from the HELP computer model.

Section 3.6.2

Demonstrate that the disposal site is designed to minimize the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal. [30 TAC §336.729(f)]

Comment: Please describe the interim cover mentioned in Section 3.6.2 in Volume 1 of the Application. Among the questions that should be addressed are: What are the properties of the interim cover? How much time elapses between the placement of waste and the installation of the final topmost cover? How much time elapses between the placement of waste and the installation of the interim cover? How much of the waste is covered in this interim condition?

Section 3.7.1

Describe the design basis natural events or phenomena and their relationship to the principal design criteria. [30 TAC §336.707(2)]

Comment: For long term stability, please use the following design basis: 1) maximum earthquake, 2) probable maximum flood (PMF) and probable maximum precipitation (PMP), and 3) extreme meteorological conditions. Examples of long-term stability design include: passive design features such as the cover (erosion and mass wasting) and drainage controls such as ditches. For short-term normal operational stability considerations, the use of less severe natural events may be used in lieu of the long-term stability requirements, but should be justified by the applicant with additional engineering design features. Examples of short-term normal operational stability design issues include pumps, water collection and transfer equipment. Please note that location standards are based on a 100-year flood event and we believe it would be a reasonable minimum design standard. [30 TAC §336.728(d)]

Section 4.2

Describe construction of the disposal facility, including construction methods of the

disposal units. [30 TAC §§336.707(5), 305.54(f)]

Comment: Describe the construction and installation of the final cover system. Describe specific installation techniques for each layer (such as moisture addition and compaction) that must be employed, and specify test methods to ensure successful installation. Traffic access corridors are mentioned briefly. Describe the location, construction, and maintenance of traffic access corridors during the construction of the facility. Provide maps to show how the traffic access corridors will change over time.

Section 4.3.3

Describe construction of the disposal facility, including construction methods of the disposal units. [30 TAC §§336.707(5), 305.54(f)] Describe: storage, maintenance, replacement, and inspection of equipment.

Comment: Provide procedures for conducting an inspection and maintenance/replacement program for construction equipment. These procedures should include organizational responsibilities for the program, and details on how repaired / replacement equipment are tracked.

Section 4.4

Provide plans for the operation of a monitoring program during the land disposal facility site construction. Measurements and observations shall be made and recorded to provide data to evaluate the potential health and environmental impacts during the construction of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. [30 TAC §336.731(b)]

Comment: Although the new Appendix 7.3.2, *Early Warning and Corrective Action Plan* goes into greater detail on methods dealing with early warning for various media pathway, it still does not constitute an early warning monitoring and corrective action system. This system should demonstrate how it dovetails with the Radiological Environmental Monitoring Program (REMP) and Hazardous Chemical Monitoring Program. Demonstrate how the new appendix addresses development of trigger levels and actions to be performed upon reaching these levels (i.e., notifications, reports, additional investigations, generic corrective action plan, etc.). TCEQ notes that Section 7.3.2 and Appendix 11.1.1, Environmental Report, Section 8.3.4 provide a discussion of the components that would go into the development of a generic corrective action plan. Please provide a detailed early-warning and corrective action plan that incorporates the items listed above.

Comment: See the comments for **Section 2.10.1 and 7.3.2.**

Section 5.1

Describe the types, chemical and physical forms, quantities, classification, and specifications of the radioactive material proposed to be received, possessed, processed, and disposed of at the land disposal facility. The description shall include any prior disposal containing radioactive material at the site. The description shall include performance criteria for form and packaging of the waste or radioactive material that has been previously received and will be received. [THSC §401.112(a)(8)] & [30 TAC §§336.707(6), 305.45(a)(8)(B)(ii)]

Comment: Please provide volumes, concentrations, activities, and radionuclides for 11(e)(2) waste, NORM waste, containerized waste, and the previously disposed radioactive material in the RCRA facility, including performance criteria for form and packaging. Further, please provide the types, chemical and physical forms, quantities, classifications, and specifications of the radioactive material proposed to be disposed of at the land disposal facility. The applicant considers past and future quantities of radioactive materials disposed in the RCRA facility as background radiation. The TCEQ disagrees with this, and radioactive sources from this waste need to be included in the performance assessment.

Section 5.2

The applicant shall provide a Waste Analysis Plan which describes [THSC §§401.218, 401.225]:

5.2.1 The Applicant's protocol for waste acceptance, classification, and rejection criteria.

5.2.2 All analysis and inspection techniques, including any analytical procedures to be used.

5.2.3 A description of how the facility will ensure waste and/or debris arriving at the site matches the waste and/or debris designated on accompanying shipping tickets.

5.2.4 A description of the specific provisions and actions the applicant will take if the materials do not meet low level radioactive waste specifications or are improperly processed or packaged.

5.2.5 Normal characteristics of the waste which must be known in order to store, process, or dispose of the waste and debris; and any abnormal characteristics which may upset further treatment or processing operations.

Comment: The applicant provided a plan in appendix 5.2-1 which does not contain the information required to allow for a technical evaluation of this item. The contents of the plan that was provided were mainly restatements of the contents of the rules in 30 TAC §336.362, and statements that attempt to put the responsibility of compliance on the generators and shippers. The applicant needs to provide a plan that demonstrates how the applicant will be protective of the worker and the public from the LLRW that it receives at the time that it receives the waste. In addition the applicant needs to demonstrate in this plan how it will comply with all applicable laws, rules, and standards relating to processing and packaging of low-level radioactive waste. The Applicant is advised to review and address DOT, NRC and all other applicable regulations, statutes and standards in the development of this plan.

Comment: The applicant indicates in section 5.2.5, page 5-8 of Volume 1 that if waste received at the LLRW land disposal facility does not meet disposal requirements then waste could be transferred to the RCRA WCS treatment facility. If the applicant intends to do this, the applicant

needs to provide a description of the treatment facilities, address this issue in the Waste Analysis Plan and include operating procedures pertaining to the processing of this waste.

Section 5.5.1

Provide an Operating and Emergency Procedures Manual that provides detailed procedures for receiving, handling, storing, processing, and disposal of waste. Emergency procedures shall include a spill detection and cleanup program for the site and associated transportation of waste. [THSC §§401.112(a) (12), 401.112(a)(16)] & [30 TAC §336.707(9)]

Comment: The Rogers and Associates document, provided in Appendix 5.5 is a good framework for development of draft procedures for the compact and federal waste facilities. This document provides a method for developing a set of procedures for an LLRW facility. However, it does not provide an Operating and Emergency Procedures Manual as required by 30 TAC §336.707(9). Please provide detailed implementing procedures dealing with operations and emergencies. Please ensure that procedures address the guidance provided in NUREG-1199, “Standard Format and Content of a License Application for a Low-level Radioactive Waste Disposal Facility,” Section 8.4, Emergency Planning, and Section 8.6, Facility Administrative and Operating Procedures.

Section 5.5.2

Provide a description of the radiation safety program for control and monitoring of contamination to personnel, vehicles, equipment, buildings, and the disposal site. Both routine operations and accidents shall be addressed. The program description shall include procedures, instrumentation, facilities, and equipment. [30 TAC §336.707(8)]

Comment: As discussed in Section 5.5.1, the procedures in the new Appendix 5.5 are not site specific and do not constitute an Operating and Emergency Plan Manual. Please provide specific procedures which address instrumentation, facilities, and equipment that will be used in support of the radiation safety program. Please identify in the implementing procedures specific portable and laboratory technical equipment and instrumentation, respiratory protective equipment, protective clothing, and the criteria for the selection of equipment, instrumentation, and facilities in the description. In addition, please describe equipment and design features used for ensuring that occupational radiation exposures will be ALARA. It is suggested that to be inclusive of items required by 30 TAC §336.707(8), the applicant include the information provided under guidance document NUREG-1199, “Standard Format and Content of a License Application for a Low-level Radioactive Waste Disposal Facility,” Section 7.0, Occupational Radiation Protection.

Section 5.5.3

Provide a description of the administrative procedures that the applicant must apply to control activities at the land disposal facility, including hours of proposed operation. [30 TAC §336.707(10)]

Comment: The procedures in the new Appendix 5.5 are not site specific and do not constitute an Operating and Emergency Plan Manual. Please submit site-specific implementing procedures to meet this requirement. Examples of procedures that meet the intent of 30 TAC §336.707(10) are provided in NUREG-1199, “Standard Format and Content of a License Application for a Low-level Radioactive Waste Disposal Facility,” Section 8.6, Facility Administrative and Operating Procedures.

Section 5.6.1

Provide a plan to comply with the requirements of 30 TAC Chapter 335 (relating to Industrial Solid Waste and Municipal Hazardous Waste) for the disposal of mixed waste. The licensee may not dispose of mixed waste unless the licensee is specifically licensed for the disposal of mixed waste under 30 TAC Chapter 336 and permitted under 30 TAC Chapter 335. [30 TAC §336.733(c)]

Comment: For the FWF, please address the requirements of 30 TAC Chapter 335, detailing how the requirements of this section dovetail with requirements of 30 TAC Chapter 336: facility siting criteria, facility management, wastes and waste analysis, engineering design and geology, closure and post-closure plans, financial assurance.

Section 5.6.2

Provide plan to comply with the following requirements: All low-level radioactive waste and mixed waste received for disposal by the applicant shall be classified in accordance with 30 TAC §336.362(a), shall meet the applicable characteristics of 30 TAC §336.362(b) , and shall be labeled in accordance with 30 TAC §336.362(c). [30 TAC §336.733(a)]

Comment: The applicant did not provide a waste classification and labeling plan with procedures specific to the proposed LLRW Land Disposal Facilities. The applicant instead provided a set of instructions on how to develop procedures for a LLRW Land Disposal Facility with examples of generic procedures in which mixed waste and Federal waste were not accepted, and bulk waste placement was not employed. Please provide a manual with procedures specific to the proposed site, design, operations, and specific Federal and State regulations applicable to this project.

Section 5.7.2

Provide a description of the operational monitoring programs, including radioactive and chemical characteristics; and plan for taking corrective measures if migration of radionuclides or chemical constituents is indicated. Monitoring data shall be sufficient to evaluate the potential health and environmental impacts during the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. Demonstrate the capability of the monitoring system to provide early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. [30 TAC §336.708(a)(10) & [30 TAC §336.731(b)]

Comment: Please refer to comments for Sections 2.10.1, 4.4, and 7.3.2.

Section 6.2.1

The applicant shall provide a description of baseline, operational, and long-term environmental monitoring programs, including radioactive and chemical characteristics, and the plan for taking corrective measures if migration of radionuclides or chemical constituents is indicated. [30 TAC §336.708(a)(10)]

Comment: The procedures in the new Appendix 5.5 are not site specific and do not constitute an Operating and Emergency Plan Manual for baseline, operational, and long-term environmental monitoring needed to meet the requirements of 30 TAC §336.708(a)(10). If hazardous chemical wastes are anticipated to be received in the federal facility, then provide an environmental monitoring program and implementing procedures that establish a baseline for appropriate chemicals and which allows for monitoring of chemical wastes over the operational, closure, and post-closure periods. Please also provide plans concerning corrective measures to address migration of radionuclides or chemical constituents, for appropriate media and pathways during the operational, closure, and post-closure periods.

Comment: Please refer to comments for Sections 2.10.1, 4.4, and 7.3.2.

Section 6.2.2

The applicant shall provide a post-operational surveillance monitoring program based on the operating history and the closure and stabilization of the disposal site. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. [30 TAC §336.731(c)]

Comment: Please refer to comments for Sections 2.10.1, 4.4, and 6.2.1

Section 6.2.3

The licensee shall have a plan for taking corrective measures if migration of radionuclides and chemical constituents would indicate that the performance objectives of 30 TAC §336.723 may not be met. [30 TAC §336.731(d)]

Comment: Please refer to comments for Sections 2.10.1, 4.4, 6.2.1 and 7.3.2.

Section 7.2.1

The applicant shall provide a description of the long-term environmental monitoring programs, including radioactive and chemical characteristics, and plan for taking corrective measures if migration of radionuclides or chemical constituents is indicated [H&SC §401.112(a)(6), (11) & (17)] & [30 TAC §336.708(a)(10)]

Comment: Please refer to comments for Sections 4.4, 6.2.1 and 7.3.2.

Section 7.3.2

The applicant shall provide a plan for taking corrective measures if migration of

radionuclides and chemical constituents would indicate that the performance objectives of 30 TAC §336.723 may not be met.

Comment: The applicant has provided an early warning and corrective action plan as new Appendix 7.3.2. Appendix 7.3.2 is entitled Early Warning and Corrective Action Plan but contains no information on what and how corrective measures will be implemented. The plan should address, at a minimum, the scope and schedule for determining and taking corrective measures. Please submit a generic plan that includes corrective measures if migration of radionuclides and chemical constituents would indicate that the performance objectives of 30 TAC §336.723 may not be met and show one example or specific measures to be taken in the case of migration of constituents of concern in groundwater.

Section 8.1.2

The applicant must demonstrate that the disposal site shall not be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives of 30 TAC §336.723 or significantly mask the environmental monitoring program. If activities involving radioactive material were previously performed on the site, evaluate the contribution of those activities that may impact the ability of the site to meet performance objectives. [30 TAC §336.728(k)]

Comment: The applicant states that exempt quantities of radioactive materials have been previously disposed in the RCRA permitted landfill and will neither adversely impact the ability of the site to meet the regulatory performance objectives nor significantly mask the environmental monitoring program. In accordance with 30 TAC §336.728(k), please provide a listing of all nearby facilities, businesses, and activities including ongoing storage, processing, and disposal that could potentially have an impact on the disposal site either during operations or after closure. The applicant states that detailed data on previously disposed exempted material is not available. Exemptions can only be granted through written request and written authorization from the appropriate regulatory agency. Written authorization for the exemption is granted only after detailed information is provided on the types, quantities, and activities of the radioactive material. This should be demonstrated by providing the types, quantities, and activities of previously disposed and future disposals (i.e. by-product material) of radioactive material that could impact the ability of the site to meet the performance objectives.

Section 8.2.1

Describe the types, chemical and physical forms, quantities, classification, and specifications of the radioactive material proposed to be received, possessed, processed, and disposed of at the land disposal facility. Provide sufficient information about the wastes projected to be disposed of at the disposal site to allow for defensible modeling of potential radiological impacts associated with waste disposal. This description shall include any prior disposal containing radioactive material at the site. This description shall include performance criteria for form and packaging of the waste or radioactive material that has been previously received and will be received. [30 TAC §§336.707(6), 305.45(a)(8)(B)(ii)] & [THSC §401.112(a)(8)]

Comment: Please refer to the comment for Section 5.1.

Section 8.2.2

The following information on waste characteristics should be provided: (7) A presentation and discussion of any limitations that will be imposed on waste receipt, form, packaging, or other characteristics that would influence assessments of disposal facility performance. Such limitations could potentially include limitations on total site inventories of radionuclides of concern (e.g., C-14, H-3, Tc-99, or I-129), or requirements on the structural stability of certain Class A wastes. These proposed limitations will be incorporated into the land disposal facility license as conditions of operation. [THSC §401.112(a)(8)] & [30 TAC §§336.707(6), 305.45(a)(8)(B)(ii)] & [NUREG 1199, Section 6.1.1]

Comment: In addition to meeting the requirements of 30 TAC §336.362, Appendix E, please provide a discussion and plan for waste acceptance including special requirements for waste receipt, waste form, packaging, and limitations placed on specific radionuclides that exhibit certain characteristics such as being highly mobile in the environment, volatile, very high external dose rates, or having very long half-lives. Also, discuss procedures on possession and security of special nuclear material.

Comment: Please refer to the comment in Section 5.2.

Section 8.2.3

Describe the waste anticipated to be generated during closure operations. The information should be sufficient to enable an independent staff assessment of potential closure costs and impacts. The waste description should thus provide information similar to that discussed in item 8.2.2(4). [THSC §401.112(a)(8)] & [30 TAC §§336.707(6), 305.45(a)(8)(B)(ii)] & [NUREG 1199, Section 6.1.1]

Comment: The TCEQ believes that waste will be generated during decommissioning of the disposal sites. The applicant's referenced Section 6.1.2 does not provide a complete description of the types, quantities, and activities, of such wastes. Please provide a complete description.

Section 8.3.1

Demonstrate that operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in 30 TAC 336 Subchapter D (relating to Standards for Protection Against Radiation), except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by 30 TAC §336.724 (relating to Protection of the General Population from Releases of Radioactivity). Effort shall be made to maintain radiation exposures as low as is reasonably achievable. [30 TAC §336.726]

Provide analyses of the protection of individuals during operations including assessments of expected exposures due to routine operations and likely accidents during handling,

processing, storage, and disposal of waste. The analyses shall provide reasonable assurance that exposures will be controlled to meet the requirements of 30 TAC Chapter 336 Subchapter D (relating to Standards for Protection Against Radiation). [30 TAC §§336.709(3), 336.726]

Comment: As discussed in Section 5.5.1, the procedures in the new Appendix 5.5 are not site specific and do not constitute an Operating and Emergency Plan Manual. Please provide the implementing procedures in support of the land disposal facilities' Radiation Safety Program, Appendix 5.5.2-1. Also, Appendix 8.0-4, Worker Doses, states that detailed procedures will need to be developed to safely handle Class B/C waste and the Containerized Class A wastes. Please provide procedures for handling such wastes that will provide reasonable assurance that exposures will be controlled to meet the requirements of 30 TAC Chapter 336, Subchapter D.

Section 11.9

Provide a description of baseline, operational, and long-term environmental monitoring programs, including radioactive and chemical characteristics, and the plan for taking corrective measures if migration of radionuclides or chemical constituents is indicated. [30 TAC §336.708(a)(10)]

Comment: The monitoring program description still does not appear to include chemical characteristics in soil. All chemical data provided is for groundwater only. Although it is acknowledged that the primary pathway for chemical constituent migration is via leachate to groundwater, without establishing nonradiological background and baseline soil data, it is not possible to identify any site-related elevations of chemical concentrations in soil that may warrant concern. Please provide chemical characteristics in soil. The applicant's response refers to a 1974 Soil Conservation Service report and implies that it could be used to obtain baseline soil data. These reports generally do not provide much detail regarding the concentrations of soil constituents. Please provide detailed plans to sample and monitor nonradiological constituents in soil during the facility's various phases.

Section 11.9.1

A pre-operational monitoring program shall be conducted to provide basic environmental data on the disposal site characteristics. For those characteristics that are subject to seasonal variation, data must cover at least a 12-month period. The report shall address the following topics: [30 TAC §336.731(a)]

- (1) Meteorological Baselines**
- (2) Hydrology and Water Quality**
- (3) Terrestrial Environment**
- (4) Radiological Baselines**

Comment: Please refer to comment for **Section 2.10.1**.

Section 11.9.2

During the land disposal facility site construction and operation, the licensee shall maintain a monitoring program. Measurements and observations shall be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. The applicant's report shall address the following topics: [30 TAC §336.731(b)].

- (1) Meteorological Monitoring System**
- (2) Hydrological Monitoring System**
- (3) Ecological Monitoring System**
- (4) Radiological Monitoring System**

Comment: Please refer to comments for **Sections 2.10.1 and 6.2.1**.

Section 11.9.3

Provide a post-operational surveillance monitoring program based on the operating history and the closure and stabilization of the disposal site. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. [30 TAC §336.731(c)]

Comment: Please refer to comment for **Section 4.4**.

Section 12.1

The financial information in the application shall be sufficient to demonstrate that the financial qualifications of the applicant are adequate to carry out the activities for which the license is sought. [THSC §401.108], [30 TAC §§336.735, and 305.50(a)(4)(D)(i-vii)].

Comment: The application indicates that a combination of debt and equity financing will be used to fund costs. Although a company identified as Andrews County Holdings, Inc. is expected to provide certain debt financing, there is no information describing the commitment from Andrews County Holdings, Inc. to provide funds. Nor is there information that demonstrates Andrews County Holdings, Inc.'s ability to provide these funds. Please provide information supporting the claim that funds will be available from Andrews County Holdings, Inc., or from any of WCS' parent companies, to cover the estimated costs of conducting all licensed activities over the planned operating life of the project, including costs of construction, operation, and disposal.

Section 12.1.1

Costs of construction, pre-construction and conducting all licensed activities over the planned operating life of the project, including costs of disposal 30 TAC §336.735.

Comment: In addition, please provide detailed pro-forma statements for the operational lives (35 years) for both the Compact and the Federal Waste Disposal Facilities for the TCEQ to assess operating costs and funding sources.

Comment: Please provide pro-forma statements that include cost estimates and quotes from mechanism issuers for providing the required financial assurance mechanisms.

Section 12.1.2

Paying annual license fees and any agency costs of processing the application that may exceed the \$500,000 application processing fee (30 TAC §336.735).

Comment: The applicant estimates licensing fees and agency costs of processing the application at \$5,000,000, including the initial \$500,000 application processing fee. Please provide proof that the applicant already has these funds on hand. Note that a demonstration of the ability to obtain these funds, as is allowed for other preconstruction costs, does not meet the burden.

Section 12.1.3

Provide sufficient insurance to cover potential injury to any property or person, including potential injury from risks relating to transportation (30 TAC §336.736(e)).

Comment: Please clarify whether liability policies cited in support of the application are the same policies used to demonstrate financial obligations for the applicant's existing RCRA permit. If so, the existing coverage amounts would not meet the requirements for the subject application since 30 TAC §37.9059(g) requires coverage distinct from any other liability requirements under Chapter 37. Providing additional insurance coverage beyond that already in place must be accounted for in the pro-forma cost assumptions.

Comment: Please assume a worst-case scenario, rather than "normal circumstances" as cited in Volume 1, page 12-6, in determining sufficient liability coverage.

Comment: Please justify the assumption that the 14,000-acre boundary of the applicant's property meaningfully limits potential third-party liability.

Section 12.1.4

Providing cost estimates and/or proposed third-party liability coverage limits as well as information intended to support the cost estimate and/or liability limits for...: 30 TAC §§336.735 and 336.736.

Comment: The applicant indicates in section 12 of the application, Volume 1, page 12-6, that it intends to combine financial assurance coverage for closure, post closure, decommissioning and decontamination for the LLRW Land Disposal Facilities and for the RCRA/TSCA facilities. If this is the case the applicant needs to provide costs associated with the closure, post closure, decommissioning and decontamination associated with the RCRA/TSCA facility and any other operation at the existing facility for which the applicant intends to combine financial assurance mechanisms..

Section 12.2

The applicant described how the proposed third party liability coverage amounts to be obtained by the applicant is sufficient to cover potential injury to any property or person, including potential injury from risks relating to transportation 30 TAC §336.736(e).

Comment: Please refer to the comment for **Section 12.1.3**.

Section 12.5

The applicant has provided the financial information described in 30 TAC §305.50(a)(4)(D)(ii)-(vii) to demonstrate the financial capacity to satisfy the requirements of 12.1.

Comment: Please refer to the comment for **Section 12.1**.

TABLE 1

<u>Stratigraphic Horizon</u>	<u>TOUGH2 Model Layer</u> ¹	<u>K-vertical</u>	<u>K-horizontal</u>	<u>Porosity (ϕ)</u>	<u>avg K-vert</u>	<u>avg K-horiz</u>	<u>avg K-v&h</u>	<u>avg ϕ</u>
Blakeney-Conger Series Soils	--	?	?	?	?	?	?	?
Caprock Caliche	--	?	?	?	?	?	?	?
OAG	--	?	?	?	?	?	?	?
Triassic Dockum Group								
Cooper Canyon Formation								
Clay	(L1)	?	?	?	?	?	?	?
80-ft Sand	(L2)	?	?	?	?	?	?	?
Clay	(L3)	?	?	?	?	?	?	?
125-ft Sand	(L4)	?	?	?	?	?	?	?
Clay	(L?)	?	?	?	?	?	?	?
180-ft Sand	(L?)	?	?	?	?	?	?	?
Clay	(L5)	?	?	?	?	?	?	?
225-ft Sand ("Uppermost Aquifer")	(L6)	?	?	?	?	?	?	?
Clay	?	?	?	?	?	?	?	?
Trujillo Formation								
600-ft Sand	?	?	?	?	?	?	?	?
Tecovas Formation								
Clay	?	?	?	?	?	?	?	?
Santa Rosa Formation								
Sand (Drinking Water Aquifer)	?	?	?	?	?	?	?	?

NOTES:

¹ Based on Volume 3, Figure 6.6-7, "Schematic Geologic Column Modeled with TOUGH2."

Attachment 2

Additional Information

17 November 2004

General Comment Regarding References to Parts of the Application: When referring to anything in the application, please make references which include (1) the volume number; (2) the application appendix number (if applicable); (3) the section number (if applicable); (4) the report-level appendix number (if applicable); (5) the figure number (if applicable); and (5) the table number (if applicable). This will help facilitate locating information within the application. For the same reason, we request that each figure and table be numbered in as logical a way as is practicable.

General Comment Regarding Published References: Please provide the requested reference information in Table 2.

Section 1.19

Submit as “Attachment B” a copy of the warranty deed or other conveyance showing that the right, title, and interest in the land, including mineral interests, on which the land disposal facility or facilities are proposed to be located is owned in fee by the applicant. If land, including mineral interests, is not owned in fee by the applicant, indicate how the requirements of §§336.710 and 336.734 will be addressed. [30 TAC §336.807(d)(9)] & [THSC §401.204]

Comment: Figures B-1 and B-2 are not consistent with the metes and bounds description given at Exhibit A, Volume 687, Page 878, due to a possible typographical error. Please provide correct survey information on subsequent revisions of Figures B-1 and B-2.

Comment: Appendix 1.19.2, Exhibit C, Updated Ownership Report, shows three tracts of land comprising Section 25 totaling approximately 606 acres. Please explain why Section 25 is less than 640 acres in total area.

Comment: Please describe the purpose of the Leasehold Ownership section of Appendix 1.19.2, Exhibit C, Updated Ownership Report.

Section 1.21.3

Institutional information in the application shall include: a description of the ownership of the land and fixtures that are part of the proposed disposal site. A plat plan describing the site and identifying ownership of the surface and subsurface estates must be included. Where portions of the site have been leased or will be leased to others, the terms of the lease agreement must be described. [30 TAC §336.710(3)]

Comment: Figure C-1 is not consistent with the metes and bounds description given at Attachment C, Legal Description of Property, due to a possible typographical error. Please provide correct survey information on subsequent revisions of Figure C-1.

Section 1.22

Describe the activities conducted by the applicant which require a permit or license from a regulatory authority. [30 TAC §305.45(a)(5)]

Comment: Table 1.24 shows no authorizations issued under the Texas Radiation Control Act (TRNA); however, two licenses from the Texas Department of State Health Services (TDSHS) are indicated. Please amend the table accordingly. Further, a TSCA authorization from the Environmental protection Agency (EPA) is referenced in Table 1.24, but no supporting information is provided regarding that authorization. Please provide this information.

Section 1.24

Indicate (by listing the permit/license number(s) in the column below) all existing, pending, or interim status permits or licenses; permits-by-rule; state and/or federal permits or other approvals which pertain to pollution control or waste management conducted by your facility. [30 TAC §§305.45(a)(7), 336.708(a)(12)]

Comment: Please provide supporting information regarding the TSCA authorization from the EPA referenced in Table 1.24.

Section 2.2.1

Describe and quantify area and site characteristics including historical and cultural landmarks, archaeology, demography, and current land uses. [30 TAC §§336.708(a)(3), 336.708(a)(8)(B)]

Comment: Please provide a map showing the ethnic/racial distribution of the local population surrounding the site, and a map showing the distribution of income levels surrounding the site.

Comment: Please provide historical data for basic demographic variables (i.e. race/ethnicity, income, employment indicators). A brief analysis of the historical data is necessary to demonstrate how the community has changed in the past several decades. This historical analysis may be developed further with the use of local histories and/or oral history interviews.

Section 2.2.3

Describe and quantify socioeconomic effects on surrounding communities of operation of the licensed activity and of associated transportation of low-level radioactive waste. [THSC §401.112(a)(3)]

Comment: Please provide a more balanced account of the costs and the benefits of this project. Several potential “costs” are not addressed in the application, including but not limited to (a) negative impact on quality of life, (b) negative impact on aesthetic value of community, (c) negative impact on property values near the site, and (d) health risks for workers.

Comment: Please address whether the health care facilities and fire department in the community are trained and prepared to deal with any emergency situations related to accidental radiation exposure.

Comment: Please specify the expected tax dollars that the WCS disposal facility will provide for Andrews County on an annual basis.

Comment: Please specify the likely wages and benefits for the 50 construction workers, the 24 full-time employees

that are hired locally, and the part-time employees that are hired locally.

Comment: Please clarify the discrepancy between “24 full-time employees plus part-time personnel...employed by WCS during the operation of the proposed facilities” and “WCS facility...providing direct employment for 16 project personnel annually”? (p. 2-25) Does this mean that there will be 16 full-time employees and 8 part-time employees?

Comment: Please clarify how the “multipliers” used in this application have been determined (i.e. 3.23 multiplier for employment impact; 2.80 multiplier for economic impact). Where do these numbers come from?

Comment: Please provide analysis of demographic data in a way that defines different stakeholder groups, and links different socioeconomic groups to different costs and benefits. The applicant needs to clarify how the impacts will vary among different stakeholder groups in the community.

Comment: Please describe positive and negative impacts on areas of secondary impact (i.e. state of Texas, regions affected by the transportation of waste).

Comment: Please discuss *perceived* costs and benefits to areas of secondary impact, such as the state of Texas and the regions affected by transportation of low-level radioactive waste.

Comment: Please include plans to inform the public about transportation routes, schedules and emergency procedures.

Section 2.3.1

Describe and quantify area and site characteristics including air quality, meteorology, climatology, and natural hazards. [THSC §401.112(a)(1)] & [30 TAC §336.708(a)(3)]

Comment: Please include meteorological data in accordance with NRC Regulatory Guide 4.18, which says, “State the sources of this information and data, and include data collected from the onsite meteorological measurement program.” Also, please include information on the representativeness of the data for the proposed site. Please provide specifications on the meteorological data measurements recorded on-site, and state the limitations and accuracy of the input data. [NUREG-1200, SRP 6.1.5.2, Sections 2.2(2) & 2.2(3)].

Among the questions that should be addressed, for example, are: Which instruments were used to measure wind speed, humidity, etc.? How was performance of the instruments determined? What were the overall capture rates of the instruments, how many data records were recorded, and what were the instruments’ poorest performance in a single month? What are the limits of the instruments used? What are the instruments’ level of accuracy? It would also be helpful to include graphs indicating the diurnal variation of the average hourly precipitation during the period recorded (2000-2003) and for each season that was recorded on-site.

Comment: Provide input and output of the AERMOD computer program of the site in order to model air dispersion and evaluate the impact of atmospheric emissions on air quality. AERMOD takes advantage of boundary layer concepts and turbulence theory, which is physically more realistic. MET data can be found on the TCEQ website, and terrain data can be found either at the TNRIS website or USGS website.

Comment: Please provide a paleo-climate study of the region.

Section 2.4.1

Describe and quantify area and site characteristics, including surface hydrology. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Please state how many days per year Baker Springs and the ephemeral onsite playas contain water.

Section 2.6.1

Describe and quantify area and site characteristics including geotechnical features, geochemistry, soils, and natural radiation background. [30 TAC §336.708(a)(3)]

Comment: The OAG and caprock caliche are shown separately in Volume 1, Figure 2.6.1-1. In order to understand the relative geologic importance, please explain the calichification process that produced the caprock caliche, and clarify whether the caprock caliche has its own proper formation name, or instead is the same as (or a part of) the Ogallala/Antlers/Gatuña.

Section 2.9.1 and Appendix 2.9.1

Describe and quantify area and site characteristics including ecology [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Please provide written documentation or some other form of personal communication with personnel from the Texas Parks and Wildlife Department and/or the U.S. Fish and Wildlife Service regarding the likelihood of threatened/endangered species occurring near the site, rather than relying on these agencies' web sites and observations made in the field. A "Rare Resources Request Review" form is available on the TPWD web site and can be used to obtain a written evaluation from TPWD of rare and threatened/endangered species expected to occur in the immediate vicinity of the site.

Appendix 2.9.1, Section 4.0

Comment: In addition to the TCEQ and Texas Parks & Wildlife, please include the Texas General Land Office and U.S. Fish and Wildlife Service as Natural Resource Trustee agencies that may be involved in the HEA.

Section 3.3

Provide accurate drawings and descriptions of on-site buildings including, but not limited to, construction, foundation details, instrumentation, ventilation, plumbing and fire suppression systems, and types of intruder barriers; onsite traffic systems; physical security system; survey control program; areas of waste storage. [30 TAC §§336.707(5), 305.54(f)]

Comment: The new Appendix 3.0-3.4 states that the drawings for the decontamination and staging pads "indicate a variable curb height from about 16" at the collection box to 9" along the short sides. However, Drawing C.014 indicates a 6" curb height. Please reconcile.

Comment: There is confusion in Appendix 3.0-3.4 with regards to the variable “D” in the “Capacity of Decon and Staging Pads” calculations. Does it really belong in the V_{req} equation? How is the V_{pad} value calculated?

Comment: How long is the contaminated water stored in the leachate storage tanks. What plans or contingencies are in place in the case that the tanks become full. What method is used to determine the current water level in the tanks.

Comment: The calculations for the “Leachate Storage Tanks” in Appendix 3.0-3.4 indicate that the volume of the leachate tank is in ft^3 . It appears the units should be in gallons.

Section 3.5.1

Describe the design features of the land disposal facility and the disposal units. For near-surface disposal, the description shall include those design features related to integrity and structural stability of covers for disposal units. [30 TAC §§336.707(4), 305.54(f)]

Comment: WCS comments that the reserve clay fill will be available to re-form and self-heal in the event of localized settlement. Provide numerical analyses to estimate localized settlement, and demonstrate that the material properties of the clay is sufficient to self heal across the predicted settlement.

Section 3.5.2

Demonstrate that the covers are designed to minimize water infiltration, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity. [30 TAC §336.729(d)]

Comment: Please insure consistency in runoff calculations. In other words, if PMP overtops primary diversion ditch, please include this additional runoff to berm runoff calculations.

Comment: Please provide demonstration on how the Manning’s number, “n”, was derived for channel calculations.

Comment: Please quantify runoff for the containment ditch on the 50' ledge in the disposal cell.

Comment: The response to the original comment in this section refers to “revised Section 3.5.3”. However, this section was not revised.

Section 3.6.1

Describe those design features related to infiltration of water, contact of wastes with standing water, and disposal site drainage. [30 TAC §§336.707(4), 305.54(f)].

Comment: It appears that the diversion ditches are sending runoff to a small, existing pond /depression. Please evaluate the effects of the storm water on this pond. To what level will the water in the pond rise for each storm event. Also, consider retrofitting the pond to address sedimentation, filtration, and detention issues.

Comment: It appears that runoff from the disposal facility will become concentrated flow in various natural troughs just south of the facility. Please quantify this runoff, its effects on downstream facilities, and measures to mitigate its

erosive effects downstream.

Comment: How do the stormwater run-off volume values that fall inside an active cell in Appendix 3.0-3.15 relate to the total storm volume, Q_{totvol} , in an open area cell in Appendix 3.0-3.4

Section 3.6.2

Demonstrate that the disposal site is designed to minimize the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal. [30 TAC §336.729(f)]

Comment: Please consider using a temporary roofing structure over the active disposal cells and storage and decontamination pads in order to minimize contact of water with waste during disposal and storage.

Comment: The response to the original comment in this section refers to “revised Section 3.5.3”. However, this section was not revised.

Section 4.2

Describe construction of the disposal facility, including construction methods of the disposal units. [30 TAC §§336.707(5), 305.54(f)]

Comment: Please begin submitting detailed construction plan drawings.

Section 5.5.4

Provide the facility’s security plans. [THSC §401.112(a)(14)]

Comment: As discussed in Section 5.5.1, the procedures in the new Appendix 5.5 are not site specific and do not constitute an Operating and Emergency Plan Manual. Please provide detailed plans for implementing security measures relating to the layout of the land disposal facilities and other design features and equipment arrangements intended to provide protection of nuclear materials against theft, tampering, or radiological sabotage. Examples of information that meet the intent of THSC §401.112(a)(14) are provided in NUREG-1199, “Standard Format and Content of a License Application for a Low-level Radioactive Waste Disposal Facility,” Section 8.7, Physical Security.

Section 5.7.1

Provide a description of the facility electronic record keeping system as required in 30 TAC §336.740(i) (relating to Maintenance of Records and Reports). [30 TAC §336.707(11)]

Comment: The new Appendix 5.7.1 provides a users manual for the *WasteSoft*® program being used by WCS. However, this new appendix does not constitute an electronic record keeping system. Implementing procedures will be needed to demonstrate how this software and other electronic records will be handled to meet the requirements 30 TAC §336.740(i). In addition, the *WasteSoft*® users manual appears to be missing information that would provide an introduction and overview of the software. Please provide site-specific procedures which include maintenance of

the software, archiving of data, and reporting requirements; and ensure that the requirements of 30 TAC §336.740(i) have been met.

Section 11.9.1

A pre-operational monitoring program shall be conducted to provide basic environmental data on the disposal site characteristics. For those characteristics that are subject to seasonal variation, data must cover at least a 12-month period. The report shall address the following topics: [30 TAC §336.731(a)]

- (1) Meteorological Baselines**
- (2) Hydrology and Water Quality**
- (3) Terrestrial Environment**
- (4) Radiological Baselines**

Comment: The applicant has submitted a good, but generalized, plan for providing basic environmental data on the terrestrial environment in the revised application; however, more specific information is needed. For instance, will the methods utilized in the 2004 updates of the 1996-97 inventories continue to be used throughout the various facility phases? What radioecological thresholds will be used to evaluate those species potentially affected by site radiation? What criteria will be used to establish the reference areas that are to be used for determining baseline changes and restoration/mitigation success? How will plant productivity be measured? How will the ecological values depicted in Figure 11.9.1-1 be determined? (The revised application states that a detailed description of this “ecological values” approach is provided in Reagan (2002), but this citation did not appear in the references for this section). Please elaborate on these issues and provide any additional specific information that would aid in the understanding of the proposed monitoring program.

Regarding radioecological thresholds, DOE has finalized its technical standard “A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota” (DOE-STD-1153-2002). It is recommended that WCS review this and other available literature regarding risk to ecological receptors from radionuclides. This standard, along with tools for implementing the methodology can be found at: <http://homer.ornl.gov/oepa/public/bdac/>. Oak Ridge National Laboratory (ORNL) also has several publications on this subject, including a report implementing a screening method for evaluating radiation impacts to biota that contains biota concentration guidelines and uptake factors. The ORNL site is found at: <http://www.esd.ornl.gov/programs/ecorisk/radionuclides.html>. In addition, the New Mexico Environmental Department has developed a screening level radioecological risk assessment guidance document that should also be examined. This document can be found at: <http://www.nmenv.state.nm.us/hwb/data/eco%20risk.pdf>.

Section 11.9.2

During the land disposal facility site construction and operation, the licensee shall maintain a monitoring program. Measurements and observations shall be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. The applicant’s report shall address the following topics: [30 TAC §336.731(b)]

- (1) **Meteorological Monitoring System**
- (2) **Hydrological Monitoring System**
- (3) **Ecological Monitoring System**
- (4) **Radiological Monitoring System**

Comment: It is acknowledged that the applicant has submitted a good conceptual framework for ecological monitoring in the revised application; however, more specific information is needed. Please elaborate on the “acceptable ranges” that will be used to discern trends or abrupt changes in important ecological parameters when data are compared to baseline. What are the other “acceptable ranges” besides the one example indicated? Please provide the purpose and a detailed explanation of each of the boxes in Figure 11.9.2-1. Also see the related comments under Section 11.9.1.

Section 12.1.1

Costs of construction, pre-construction and conducting all licensed activities over the planned operating life of the project, including costs of disposal 30 TAC §336.735.

Comment: In Volume 9, Appendix 6.1.5-1-2, a cost estimate for closure costs was provided. Please clarify the following issues:

1. Regarding the surface water management system construction costs: what does “25% of planned” mean?
2. Please provide the calculations for the quantities estimated (column 2), and the assumptions made for those calculations.
3. Why is the MEANS 2002 catalog used in some cases and the MEANS 2004 catalog used in other cases?
4. If the estimator has valid reason(s) for using the 2002 catalog rather than the 2004 catalog, please use inflation adjustment factors to update 2002 dollars.
5. Please show how unit costs from “URS Expert/Contractor” were derived: examples include fittings, 80-mil HDPE liner, and geocomposite drain. Where were these unit costs obtained?
6. Why was the cost of spreading of earth left out from the Federal Facility cost estimate?
7. Why was 80-mil HDPE liner omitted from the compact facility?
8. Why was \$3.00/cy instead of \$7.25/cy used from MEANS manual regarding earth loadings for both facilities?
9. Why was \$19.45, instead \$24.50, used for the unit cost for placing stone bedding in both facilities?
10. Where does \$1.50/cy unit cost for earth spreading come from?

11. Drawing 3-0-1-35 shows two geotextile membranes and the cost estimate accounts only for one. Please clarify.
12. The indicated weights of the geotextiles in the drawings differ from those cited in the relevant cost estimates. The drawings specify 6-oz and 10-oz geotextile membranes, whereas the cost estimates specify 16-oz membranes. Moreover, the estimate for the CWF lists only one membrane layer. Please clarify.
13. The components of the conceptual closure design (cover systems for both CWF and FWF) do not match the components in the cost estimate. The conceptual design shows 15 components and, therefore, there should also be 15 work activities associated with this part of the project. The cost estimate shows fewer components. Please clarify.

TABLE 2

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 2: SITE CHAR., pp. 2-39; 2-61.	Bally, A.W., et. al., 1989.	Provide copies of pp. 1-15.
SECTION 2: SITE CHAR., pp. 2-45; 2-61.	Dutton, A.R., 1995.	Provide copies of pp. 221-231.
SECTION 2: SITE CHAR., pp. 2-37; 2-41; 2-52; 2-61.	Freese, R.A., 1979.	Provide reference to the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR. pp. 2-37; 2-43; 2-62.	Holliday, V.T., 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR., pp. 2-36, 2-62.	NOAA. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.

SECTION 2: SITE CHAR, p. 2-62.	NOAA. 2002.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-62.	NOAA. 2002a.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-41.	Price and Henry. 1985.	Provide a copy of the document.
SECTION 2: SITE CHAR, p. 2-62.	Rainwater. 1996.	Provide a copy of the document.
SECTION 2: SITE CHAR, pp. 2-36; 2-39; 2-63.	Sanford, A., et. al. 1993.	Provide a copy of the document.
SECTION 2: SITE CHAR, p. 2-63.	Sanford, A.R., et. al. 2002.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-63.	SCS. 1974a.	Provide a copy of the document.
SECTION 2: SITE CHAR., pp. 2-42; 2-63.	Terra Dynamics, Inc., 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-63.	TWDB. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR., p. 2-64.	USGS (<i>Note: the author may actually be New Mexico Tech, Earth & Environmental Science Department</i> instead of USGS). 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR., pp. 2-36; 2-64.	USGS. 1996.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-64.	Weather Disk Association, Inc. 1990.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-36.	Zoback and Zoback. 1991.	Provide a copy of the document.
SECTION 2: SITE CHAR, pp. 2-31, 2-61; and APPENDIX 2.3.1, p. 2.3.1-47.	Bomar. 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 2: SITE CHAR, pp. 2-32, 2-62; and APPENDIX 2.3.1, p. 2.3.1-47.	Grazulis. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38.	ACI, 2002, Building Code Requirements for Structural Concrete and Commentary, ACI 318-02/318R-02, Farmington Hills, MI.	Provide a copy of the document.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 5413-93 (2002)	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 596-01	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 6145-97 (2002)	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38.	ICC. 2003.	Provide a copy of the document.
SECTION 3: DESIGN, p. 3-22; APPENDIX 3.0-1, p. 3.0-1-41.	AASHTO, 2004. Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 24 th Ed., Wash., D.C.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38. APPENDIX 3.0-1, p. 3.0-1-41.	ACI, 2001, Guide to Durable Concrete, ACI 201.2R-01, Farmington Hills, MI.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2001.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2002.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2003	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2001.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 5: OPERATION, p. 5-35.	ASTM. 2003. ASTM Publication C33-03.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2003. ASTM Publication C39/C39M-03.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2004.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	EPA, 2004, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, EPA Publication No. SW-846, Wash.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 8: Performance Assessment, pp. 8-37; 8-12.	DOE, 1999. "Commercial Disposal Policy Analysis for Low-Level and Mixed Wastes," March 9, 1999.	Provide a copy of the entire document or it's location on the web.
SECTION 9, QUAL. ASSUR., p. 9-37.	ASME. 2001.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 9, QUAL. ASSUR., pp. 9-4, 9-37.	NRC. 1988.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 11.9.1, p. 11-45A.	Reagan. 2002.	Provide a copy of the document.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Draxler. 1981.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-6, 2.3.1-47.	Miller, et. al. 1973.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, p. 2.3.1-47.	NOAA. 2004.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Tornado Project. 1996a.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Tornado Project. 1996b.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 2-3, 7-1.	Aki, K., 1983, <i>Seismological Evidence in Support of the Existence of Characteristic Earthquakes</i> : Earthquake Notes, v.54, p 60-61.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-2, 7-2.	Hovorka, S.D., 2001, <i>Evaporite Deposition in the Midland Basin - End of an Era (abs.)</i> , West Texas Geological Society Fall Symposium.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-2, 7-3.	Joh, S.H., 1996. <i>Advances in Interpretation and Analysis Techniques for Spectral Analysis of Surface Waves (SASW) Measurements</i> . PhD Dissertation, The University of Texas at Austin.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-3, 4-3, 7-3.	Machette, M.N., 1998. <i>Contrasts Between Short and Long Term Records of Seismicity in the Rio Grande Rift - Important Implications for Seismic Hazard Assessments in Areas of Slow Extension</i> . W.R. Lund (ed.) Western States Seismic Policy Council Proceedings Volume, Basin and Range Province Seismic Hazards Summit, Utah Geological Survey Miscellaneous Publication 98-2.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-4, 7-3.	Orr, C.D., 1984. <i>A Seismotectonic Study and Stress Analysis of the Kermit Seismic Zone, Texas</i> : PhD Dissertation, University of Texas at El Paso.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-3, 6-4, 7-4.	Silva, W.J., Abrahamson, N.A., Toro, G., and Constantino, C., 1997, <i>Description and Validation of the Stochastic Ground Motion Model</i> . Unpublished report prepared for the Brookhaven National Laboratory.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-1, 7-4.	Stokoe, K.H., II, Wright, S.G., Bay, J.A., and Roeset, J.M., 1994, <i>Characterization of Geotechnical Sites by SASW method</i> , ISSMFE Technical Committee 10 for XIII ICSMFE, Geophysical Characteristics of Sites, p. 795-816.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-1.	Bolden, G.P. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-1.	Bodvarsson, G.S., and Y. Tsang (ed). 1999.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-2.	Bodvarsson, G.S., et. al. 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 2.6.1: Geology Report, p. 7-3.	Electric Power Research Institute (EPRI). 1993.	Provide a copy of the document.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hawley, J.A. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hills, J.M. 1963.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hills, J.M. 1985.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Kelley, V.C. 1980.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Lehman, T.M. 1994a.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Lehman, T.M. 1994b.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Liu, H.H., et. al. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-7.	Osterkamp, W.R., and W.W. Wood. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-8.	Powers, D.W., and R.M. Holt. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-8.	Pruess, K. (Ed.). 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-9.	WTGS. 1976.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Buffington, L.C., and C.H. Herbel, 1965.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Casper, B.B., and R.B. Jackson, 1997.	Provide a copy of the document.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Cline, J.F., 1979.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Cline, J.F., et. al., 1982.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Depoorter, G.L., 1982.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Hackonson, T.E., 1986.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Helm, V., and T.W. Box, 1970.	Provide a copy of the document.
APPENDIX 3.0-1	ICC (Int'l. Code Council), 2003. 2003 International Building Code®, Falls Church, VA.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Jackson, R.B., et. al., 1999.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Knopf, F.L., 1994.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-42.	Schenk, H.J., and R.B. Jackson. 2002a.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-42.	Schenk, H.J., and R.B. Jackson. 2002b.	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - (recorded wind events for Andrews County area)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - [IBC (2003) conversions of wind speed to wind pressure]	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - (flying projectile impacts based on nuclear facility guidelines)	Provide a copy of the document.
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APPENDIX 3.0-1, p. 3.0-1-8.	- <i>UNKNOWN REFERENCE</i> - (ASTM D5519 for rock armor)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-9.	- <i>UNKNOWN REFERENCE</i> - (Currently available waste generation projections for DOE/NNSA)	Provide a copy of the document.

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APPENDIX 3.0-1, p. 3.0-1-12.	- <i>UNKNOWN REFERENCE</i> - (RCRA requirements)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-14.	- <i>UNKNOWN REFERENCE</i> - (Permeability tests conducted on gravel samples from Andrews County)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-21.	- <i>UNKNOWN REFERENCE</i> - (SAP2000 computer program)	Provide a copy of the program, user manual, input and output.
APPENDIX 3.0-1, p. 3.0-1-22.	- <i>UNKNOWN REFERENCES</i> - (ASTM - C39, C150, C33, C260, A185)	Provide copies of these standards.
APPENDIX 3.0-1, p. 3.0-1-23.	- <i>UNKNOWN REFERENCES</i> - (ASTM A-615; ACI SP-66)	Provide copies of these standards.
APPENDIX 3.0-1, p. 3.0-1-33.	- <i>UNKNOWN REFERENCE</i> - (UBC/IBC ground acceleration)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-34.	- <i>UNKNOWN REFERENCES</i> - (ASTM D1556, D2937, D2167, and D2922)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-37.	- <i>UNKNOWN REFERENCE</i> - (Appendix A, and Appendix B)	Provide copies of these appendices.
APPENDIX 3.0-1, p. 3.0-1-38.	- <i>UNKNOWN REFERENCE</i> - (Cine, et. al., 1982 - typo??)	Provide a copy of the document.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2002. 1544-500-3300/3340.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2004. Env. 18 05 0401.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2004. Env. 33 14 1348.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	URS est. from Means Fitting Costs.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-27.	NRC. 1978.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-27.	NRC. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 8.0-1, pp. 8.0-1-6; 8.0-1-7; 8.0-1-21; 8.0-1-24.	RAE. 2000.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-24; 8.0-1-27.	TAMU. 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, pp. 8.0-2-3; 8.0-2-7; 8.0-2-14; 8.0-2-27.	DOE. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, pp. 8.0-2-3; 8.0-2-24.	DOE. 1999.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, p. 8.0-2-24.	DOE. 2000.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-4.	American Nuclear Society, ANSI/ANS-5.10-1998, <i>Airborne Release Fractions at Non-Reactor Nuclear Facilities</i> , May 11, 1998.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	Hughs Associates, Inc., WHC-SD-SQA-ANAL-501, <i>Fire Protection Guide for Waste Drum Storage Arrays</i> , September 16, 1996.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-7.	Till, J.E., and H.R. Meyer, 1983, <i>Radiological Assessment: A Textbook on Environmental Dose Assessment</i> , NUREG/CR-3332, ORNL-5986, U.S. Nuclear Regulatory Commission, Division of Systems Integration, Washington, D.C.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-7.	Turner, D. B., <i>Workbook of Atmospheric Dispersion Estimates</i> , Research Triangle Park, North Carolina, 1969 and 1974.	Provide copy of section in textbook containing Table 8.0-5-3.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, DOE/EIS-0212, <i>Final Environmental Impact Statement for Safe Interim Storage of Hanford Tank Wastes</i> , October 1995.	Provide the section and page number where information was taken from the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-10.	United States Department of Energy, DOE-HDBK-3010-94, <i>Airborne Release Fractions/Rates and Respirable Fractions for Non-Reactor Nuclear Facilities</i> , December 1994.	Provide the section and page number.

APP. SECTION	APP. SECTION	REFERENCE	WHAT IS NEEDED
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APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, DOE/RL-2001-0036, <i>Hanford Site Transportation Safety Document, Revision 0, October 4, 2001.</i>	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, SAND84-0062, <i>The Transportation of Nuclear Materials, December 1984.</i>	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-13.	United States Department of Energy, DOE-STD-1020-2002, <i>Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities</i> , January 2002.	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-13.	United States Department of Energy, DOE-STD-1021-93, <i>Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components</i> , July 1993 (Reaffirmed April 2002).	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-6.	United States Department of Energy, DOE-STD-1027-92, <i>Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports</i> , December 1992.	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-12.	United States Department of Energy, DOE/WIPP-95-2065, <i>Waste Isolation Pilot Plant Contact Handled (CH) Waste Safety Analysis Report, Revision 7, June 2003.</i>	Provide the section and page number.
APPENDIX 8.0-6: Detailed Pathway Analysis, pp. 8.0-6-6; 8.0-6-37.	Anspaugh 1975, Anspaugh, L.R., J.H. Shinn, P.L. Phelps, N.C. Kennedy, "Resuspension and Redistribution of Plutonium in Soils," <i>Health Physics</i> v. 29, pp. 571-582, 1975.	Provide copies of pp. 571-582.
APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-85.	DOE (U.S. Department of Energy), 1990, DOE/LLW-13Tg Revision 2 " <i>Environmental Monitoring for Low Level Waste Disposal Sites</i> ," <i>National Low Level Waste Management Monitoring for Low Level Waste Disposal Sites</i> ," <i>National Low Level Waste Management Program</i> , February 1990.	Provide a copy of the document.
APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-76.	Hughs Associates Inc. (HAI), 1996, WHC-SD-SQA-ANAL-501, <i>Fire Protection Guide for Waste Drum Storage Arrays</i> , September.	Provide a copy of the document.

APP. SECTION	APP. SECTION	REFERENCE	WHAT IS NEEDED
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APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-36.	NRC (U.S. Nuclear Regulatory Commission), 2003, <i>Environmental Review Guidance for Licensing Actions Associated with NMSS Programs</i> , NUREG-1748, Division of Waste Management, Office of Nuclear Material Safety and Safeguards, Washington, D.C., August.	Provide a copy of the document.
APPENDIX 11.7, pp. 11.7-19; 11.7-31.	Grove. 1992.	Provide copies of the relevant section(s), chapter(s), and/or pages.
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